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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/809,015

03/16/2001

Peter Ka-Fai Chow

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10/27/2004

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EXAMINER

WILSON, ROBERT W

ART UNIT

PAPER NUMBER

2661

DATE MAILED: 10/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/809,015

Applicant(s)

CHOW, PETER KA-FAI

Examiner

Robert W Wilson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 11, 14-18 and 20 is/are rejected.
- 7) ☒ Claim(s) 5-10, 12, 13 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1.0 The application of Peter Ka-Fai entitled JITTER REDUCTION OF VOICE PACKETS IN A PACKET-BASED NETWORK filed on 3/16/02 without foreign priority was examined. Claims 1-20 are pending.

Claim Rejections - 35 USC § 102

2.0 The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3.0 **Claims 1** is rejected under 35 U.S.C. 102(e) as being anticipated by Harrison et. al. (U.S. Patent No.: 6,091,709)

Referring to **Claim 1**, Harrison teaches: A multiport network device (Router or 3 in a network per Fig 1)

A plurality of receive ports configured to receive frames in a packet-switched network (The router has a plurality of receive ports in the Internet or packet switched network per Fig 1)

The frames each having a source field indicating the source of the frame and the destination field indicating an intended destination for the frame (The hosts are intercommunicating via the routers which utilize TCP/IP per Fig 1 and TCP/IP inherently has a source field and destination field)

A plurality of transmit ports configured to transmit the frames in the packet-switched network (The router has a plurality of transmit ports to transmit in the Internet or TCP/IP or packet switched network per Fig 1)

A time-stamping component connected to receive the frames from the plurality of receive ports, the time-stamping component appending a time-stamp value to the received frames that correspond to voice transmissions (The Prioritizer per Figs 2 & 6 timestamps flow entries per col. 2 line 57 which are voice per Abstract and per col. 1 lines 5-67)

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Output queues corresponding to the transmit ports and connected to receive the frames from the output of the time-stamping component, the output queues forwarding the received frames to appropriate ones of the transmit ports, the output queues expediting the forwarding of the received frames that have appended time-stamp value (The QoS Manager per Fig 1 determines a forwarding delay by subtracting the current time from the time-stamp. If the forwarding delay is less than threshold 1 then the class of packets is moved to a higher priority queue shown in Figure 3 or expedited. If the forwarding delay is greater than threshold 2 then the packets are discarded per col. 2 line 51 col. 3 line 50 or col 6 line 1-44 or per col. 8 line 8-col. 10 line 17)

Claim Rejections - 35 USC § 103

4.0 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5.0 **Claims 2-4, 11, 14-18, & 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Harrison et. al.

Referring to **Claims 2-4**, Harrison teaches: The multiport network device of Claim 1,

Harrison does not expressly call for: further comprising:

an internal rules checking circuit coupled to the received ports and configured to determine frame forwarding information that indicated from which of the plurality of transports the received frames should be transmitted, the internal rules checking circuit tagging the frame forwarding information to indicated whether the frame corresponding to the frame forwarding information carries voice but teaches priority and Class of packets per col. 1 lines 5-67 as claimed in **Claim 2**,

wherein the internal rules checking circuit tags the frame forwarding information to indicate whether the frame corresponding to the frame forwarding information carries voice data based on the source of the frame but teaches priority and Class of packets per col. 1 lines 5-67 as claimed in **Claim 3**,

wherein the internal rules checking circuit tags the frame forwarding information to indicate whether the frame corresponding to the frame forwarding information carries voice data based on an indication set in the frame that the frame should be treated as a real-time frame but teaches priority and Class of packets per col. 1 lines 5-67 as claimed in **Claim 4**.

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It would have been obvious to one of ordinary skill in the art at the time of the invention that TCP/IP has the capability for assignment of a Class and priority to a voice packet per col. 1 line 5-col. 2 line 30 which performs the same function as an internal rules checking circuit coupled to the received ports and configured to determining frame forwarding information that indicated from which of the plurality of transports the received frame should be transmitted, the internal rules checking circuit tagging the frame forwarding information to indicate whether the frame corresponding to the frame forwarding information carries voice as claimed in Claim 2 and TCP/IP has the ability to Classify and prioritize packets and therefore performs the function of an internal rules checking circuit tags the frame forwarding information to indicated whether the frame corresponding to the frame forwarding information carries voice data based on the source of the frame as claimed in Claim 3, or TCP/IP has the ability to Classify and prioritize packets and therefore performs the same function as wherein the internal rules checking circuit tags the frame forwarding information to indicate whether the frame corresponding to the frame forwarding information carries voice data based on an indication set in the frame that the frame should be treated as a real-time frame as claimed in **Claim 4**.

Referring to **Claim 11**, Harrison teaches: A method of processing packets in a network device (Router or 3 in a network per Fig 1 processes packets)

Receiving frames at the network device, the frames including a source field indicating a source of the frame and a destination field indicated an intended destination for the frame (The router which is 3 per Fig 1 receives TCP/IP packets or frames. TCP/IP has an inherent source address or source field and a destination address or destination field.)

Determining whether each of the frames includes associated voice information (The reference teaches that the routers are routing voice packets which have been assigned to a class and has a priority per Abstract and per col. 1 lines 5-67 and per Figure 2)

appending a time-stamp value to the received frames associated with voice information (The Prioritizer per Figs 2 & 6 timestamps flow entries per col. 2 line 57 which are voice which have assigned a Class and Priority per Abstract and per col. 1 lines 5-67)

receiving packets at an output queue (The Queue/Priority 1-n per Fig 2 or output queue)

expediting processing of the received frames, which have the appended time stamps values, in the output queue after a predetermined period of time has elapsed since the time stamp value (The QoS Manager per Fig 1 determines a forwarding delay by subtracting the current time from the time-stamp. If the forwarding delay is less than threshold 1 then the class of packets is moved to a higher priority queue shown in Figure 3 or expedited. If the forwarding delay is greater than threshold 2 then the packets are discarded per col. 2 line 51 col. 3 line 50 or col. 6 line 1-44 or per col. 8 line 8-col. 10 line 17.

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Harrison does not expressly call for: Class but teaches Class associated with RSVP per col. 1 lines 24-67.

It would have been obvious to one of ordinary skill in the art at the time of the invention that RSVP would be utilized in order to classify different types of packets because it is an internet standard and the designer would want to design a system which is standards compliant.

Referring to Claims 14-17, Harrison teaches the Method of Claim 11,

Harrison does not expressly call for:

Wherein determining whether each of the received frames includes associated voice information includes checking a tag associated with the received frame but teaches that voice packets are assigned to a Class and priority per Figure 2 as claimed in **Claim 14**, or

Further comprising: determining frame forwarding information that indicates from which of a plurality of transmit ports the network device the frame should be transmitted but teaches routing per Figure 1 as claimed in **Claim 15**,

Or further comprising: tagging the frame forwarding information to indicate whether the frame corresponding to the frame forwarding information carries voice data based on an indication set in the frame that the frame should be treated as a real-time frame but teaches that voice packets are assigned to a class and priority per Fig 2 as claimed in **Claim 16**.

It would have been obvious to one of ordinary skill in the art at the time of the invention that voice packets assigned to a class and priority per Fig 1 perform the same function as wherein whether each of the received frames includes associated voice information includes checking a tag associated with the received as claimed in **Claim 14**, and routing per Figure 1 performs the same function as determining frame forwarding information that indicates from which of a plurality of transmit ports the network device the frame should be transmitted as claimed in **Claim 15**, and voice packets are assigned to a class and priority per Fig 2 performs the same function as tagging the frame forwarding information to indicate whether the frame corresponding to the frame forwarding information carries voice data based on an indication set in the frame that the frame should be treated as a real-time frame as claimed in **Claim 16**.

Referring to **Claim 18**, Harrison teaches: A system for processing packets in a network device (Router or 3 which is a network device which has a system for processing packets in a network per Fig 1

Means for receiving frames at the network device, the frames including a source field indicating a source of the frame and a destination field indicated an intended destination for the frame (The router which is 3 per Fig 1 has an input port for receiving TCP/IP packets or frames) each of the frames including an indication of whether the frame includes voice data (The data packets each

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have class and priority which is utilized to indicate whether a packet is a voice data packet per Abstract and per col. 1 lines 5-67 and per Figure 2)

Means for appending a time-stamp value to the received frames associated with voice information (The Prioritizer per Figs 2 & 6 or means timestamps flow entries per col. 2 line 57 which are voice which have assigned a Class and Priority per Abstract and per col. 1 lines 5-67)

Means for queueing the received frames for each of a plurality of transmission ports of the network device (The Queue/Priority 1-n per Fig 2 or means for queueing)

Means for expediting processing of the received frames, which have the appended time stamps values, in the output queue after a predetermined period of time has elapsed since the time stamp value (The QoS Manager per Fig 1 or means for expediting determines a forwarding delay by subtracting the current time from the time-stamp. If the forwarding delay is less than threshold 1 then the class of packets is moved to a higher priority queue shown in Figure 3 or expedited. If the forwarding delay is greater than threshold 2 then the packets are discarded per col. 2 line 51 col. 3 line 50 or col. 6 line 1-44 or per col. 8 line 8-col. 10 line 17.)

Harrison does not expressly call for: Class but teaches Class associated with RSVP per col. 1 lines 24-67.

It would have been obvious to one of ordinary skill in the art at the time of the invention that RSVP would be utilized in order to classify different types of packets because it is an internet standard and the designer would want to design a system which is standards compliant.

Referring to **Claim 20**, Harrison teaches: The system of Claim 18 wherein the means for expediting processing of the received frames that have appended time values includes:

Harrison does not expressly call for: means for writing the frames in which the predetermined period of time has elapsed to the read side portion of the means for queueing as soon as space is available in the read side portion of the means for queueing but teaches that the QoS Manager per Fig 1 or means for expediting determines a forwarding delay by subtracting the current time from the time-stamp. If the forwarding delay is less than threshold 1 then the class of packets is moved to a lower priority queue portion to a higher priority queue or read side portion of a new queue as soon as the read side portion is available as shown in Figure 3 or expedited. If the forwarding delay is greater than threshold 2 then the packets are discarded per col. 2 line 51 col. 3 line 50 or col. 6 line 1-44 or per col. 8 line 8-col. 10 line 17.

It would have been obvious to one of ordinary skill in the art at the time of the invention that QoS Manager per Fig 1 or means for expediting determines a forwarding delay by subtracting the current time from the time-stamp. If the forwarding delay is less than threshold 1 then the class of packets is moved to a lower priority queue portion to a higher priority queue or read side portion of a new queue as soon as the read side portion is available as shown in Figure 3 or

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expedited. If the forwarding delay is greater than threshold 2 then the packets are discarded per col. 2 line 51 col. 3 line 50 or col. 6 line 1-44 or per col. 8 line 8-col. 10 line 17 performs the same function as means for writing the frames in which the predetermined period of time has elapsed to the read side portion of the means for queuing as soon as space is available in the read side portion of the means for queuing.

Claim Objections

4.0 **Claims 5-10, 12-13, 19** objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The closest prior art Harrison et. al. (U.S. Patent No.; 6,091,709) does not disclose “writing frames to an external memory when a read side portion of the output queue is full as claimed in Claims 5, 12, & 19.

Conclusion

5.0 The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

McDonald et. al. (U.S. Patent No.: 6,442,166) dated 8/27/2002 discloses a method for scheduling cells in a queue by giving the highest priority to the latest cell. This reference is about ATM which has VPIs/VCIs but does not have a source address and destination address.

Stiliadis et. al. (Patent No.: 6,134,217) dated 10/18/2000 which discloses traffic scheduling for ATM cells based upon time since timestamp but does not disclose a source address and destination address

Sang et. al. (U.S. Patent No.: 6,140,147) dated 6/4/2002 which discloses an overflow engine which writes over flow data from one queue to another queue. This reference was owned by the assignee and was copending during this application.

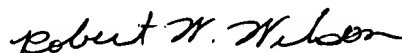
Bahls (Vakkalagadda) et. al.(U.S. Patent No. : 5,893,924) dated 4/13/1999 discloses a method of writing queueing data from a primary storage medium to an overflow medium per Fig 1.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert W Wilson whose telephone number is 571/272-3075. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on 571/272-3078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free),



Robert W Wilson
Examiner
Art Unit 2661

RWW
October 20, 2004



KENNETH VANDERPUYE
PRIMARY EXAMINER